IN THE SPECIFICATION:

Please amend paragraph **[0001]** as follows:

[0001] This application is a continuation of application Serial No. 09/340,513, filed June 28, ~~1999 pending,~~ 1999, now U.S. Patent 6,228,687, issued May 8, 2001.

Please amend paragraph **[0010]** as follows:

[0010] As the carrier substrate of such chip-scale packages is small, electrical connections between the semiconductor device and the carrier substrate are often made by ~~flip-chip type~~ flip-chip-type bonds or tape-automated bonding ("TAB"). Due to the typical use of a carrier substrate that has a different coefficient of thermal expansion than the semiconductor substrate of the semiconductor device, these types of bonds may fail during operation of the semiconductor device.

Please amend the section title appearing directly above paragraph **[0020]** as follows:

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE ~~DRAWING~~ DRAWINGS

Please amend paragraph **[0021]** as follows:

[0021] FIG. 1A is a cross-sectional representation of another embodiment of a ~~chip-scale~~ chip-scale package according to the present invention;

Please amend paragraph **[0038]** as follows:

[0038] FIG. 8A is a cross-sectional representation of another embodiment of a ~~chip-scale~~ chip-scale package according to the present invention, which includes a semiconductor device having bond pads in a leads over chip ("LOC") type arrangement;

Please amend paragraph **[0051]** as follows:

[0051] As another alternative, the polymer of carrier substrate 18 may comprise a durable polymeric material which can be applied to a semiconductor device in a layer having a thickness of up to about one mil (25 microns) or greater and which may be formed into desired

shapes of very fine resolution (i.e., about 1μm and lower) by photoimaging processes. Some photoimageable epoxies are useful as the polymer of carrier substrate 18. One such material is the multi-functional glycidyl ether derivative of bisphenol-A novolac high-resolution negative photoresist available from Shell Chemical Company of Houston, Texas under the trade name EPON® SU-8. EPON® SU-8 is a low molecular weight resin which is useful for fabricating structures having dimensions in the lower range of about 0.25μm to about 0.10μm. As employed in the present invention, however, the multi-functional glycidyl ether derivative of bisphenol-A novolac is useful for forming layers of up to about 250μm (10 mils) thick. When combined with a photoinitiator, or promoter, the photoimageable epoxy forms a highly structured, cross-linked matrix. One such photoinitiator is triaryl sulfonium salt, which is available from Union Carbide Corporation of Danbury, Connecticut under the trade name CYRACURE® UVI. That highly structured, cross-linked matrix may then be solvated in organic solvents such as ~~gamma-butyrolactone,~~ gamma-butyrolactone, propylene glycol methyl ether acetate, and methyl iso-butyl ketone. Other photoinitiators are also useful for forming such cross-linked matrices with multi-functional glycidyl ether derivatives of bisphenol-A novolac such as EPON® SU-8.

Please amend paragraph **[0052]** as follows:

[0052] Upon solvation of the photoimageable epoxy, a desired thickness of the photoresist-photoinitiator compound is applied to active surface 14 of semiconductor device 12 by known methods, such as by spin-coating or spraying. The compound layer may be masked by known processes and cross-linked by exposure to radiation to define apertures 20 therethrough. Radiation sources which are useful for cross-linking overcoat layers which include ~~a multi-functional~~ multi-functional glycidyl ether derivative of bisphenol-A novolac include, without limitation, ultraviolet radiation, electron-beam radiation, and X-ray radiation. Due to the transparency of the ~~multi-functional~~ multi-functional glycidyl ether derivative of bisphenol-A novolac that is useful in the present invention, photoimaging of carrier substrate 18 defines apertures 20 having substantially perpendicular walls. The excess material is then removed from the semiconductor device by known methods. Other materials, including other ultraviolet, X-ray, electron-beam, and laser-imageable materials may be employed to fabricate carrier substrate 18.

For example, photoimageable polyimides and other photoimageable materials which are not fully transparent may be used to fabricate carrier substrate 18.

Please amend paragraph **[0058]** as follows:

[0058] If apertures 20 are formed ~~though~~ through carrier substrate 18 after carrier substrate 18 has been secured to active surface 14, known processes may be employed to define apertures 20. For example, mask and etch techniques may be employed to define apertures 20 through carrier substrate 18. Alternatively, known laser-drilling processes may be employed to define apertures 20. As another alternative, apertures 20 may be defined by known mechanical drilling processes.

Please amend paragraph **[0060]** as follows:

[0060] Turning now to FIG. 4A, conductive traces 22, which extend substantially laterally from selected ones of electrically conductive vias 21, may be fabricated so as to be carried by carrier substrate 18. Preferably, these conductive traces 22 are disposed on backside 19 of carrier substrate 18. Alternatively, conductive traces 22 may extend, at least partially, internally through carrier substrate 18. Each conductive trace 22 preferably communicates with a corresponding electrically conductive via 21 of carrier substrate 18 and, therefore, with a corresponding bond pad 16 of semiconductor device 12. Since conductive traces 22 extend substantially laterally from their corresponding electrically conductive vias 21, conductive traces 22 of carrier substrate 18 are useful for establishing electrical connections between the contacts of a substrate and bond pads 16 of a semiconductor device 12 having a different footprint than that of the carrier ~~substrate.~~ substrate 18.

Please amend paragraph **[0063]** as follows:

[0063] When solder is employed as the conductive material of electrically conductive vias 121, if the solder protrudes beyond backside 119 of carrier substrate 118, it may be necessary to dispose an additional quantity of polymeric material on backside 119. As ~~illustrated~~ illustrated in FIG. 4C, a second substrate layer 118b may be disposed on backside 119 of carrier

substrate 118. Second substrate layer 118b may be disposed by known processes, such as by the processes explained above in reference to FIGs. 2 and 2A. Subsequent processes may then be performed on a backside 119b of second substrate layer 118b, including those processes that are explained in reference to backside 119 of carrier substrate 118.

Please amend paragraph **[0064]** as follows:

[0064] With reference to FIGs. 5 and 5A, a pad 23, 23′ may be fabricated in contact or otherwise in communication with a corresponding electrically conductive via 21 or conductive trace 22. If such a ~~pad 23~~ pad 23, 23′ is employed, the use of known ball-limiting metallurgy ("BLM") or under-bump metallurgy ("UBM") structures is preferred. Pad 23, 23′ may be fabricated by known processes, such as the processes that are typically employed to fabricate ball-limiting metallurgy structures (e.g., fabricating layers by PVD and patterning the layers by mask and etch processes). Accordingly, each pad 23, 23′ may include an adhesion layer adjacent the conductive material of its corresponding electrically conductive via 21 or conductive ~~element~~ trace 22, a solder wetting layer adjacent the adhesion layer, and an exposed, substantially non-oxidizable protective layer (e.g., gold or other noble metal) adjacent the solder wetting layer.

Please amend paragraph **[0076]** as follows:

[0076] Referring now to FIGs. 6 and 6A, conductive bumps 24 may be disposed in contact or otherwise in communication with electrically conductive vias 21 or conductive traces 22. If carrier substrate 18 includes any pads 23, 23′, conductive bumps 24 are preferably disposed adjacent such pads 23, 23′. Conductive bumps 24 may comprise any electrically conductive material known in the art to be useful as a conductive joint between adjacent devices. Exemplary materials include, without limitation, solders, electrically conductive elastomers ~~(e.g.~~ (e.g., z-axis elastomers), z-axis tapes, and other electrically conductive materials and structures. Known processes may be employed to fabricate conductive bumps 24 from these materials and in communication with selected ones of electrically conductive vias 21 of carrier substrate 18.

Please amend paragraph **[0077]** as follows:

[0077] Alternatively, with reference to FIGs. 6B and 6C, which illustrate the fabrication of chip-scale package 110, if carrier substrate 118 does not include conductive traces extending across backside 119 thereof or if only a contact region (see, e.g., reference 22a of FIG. 1) of each conductive trace (see, e.g., reference 22 of FIG. 1) of carrier substrate 118 is exposed to backside 119, a substantially planar layer 126 comprising a non-conductive elastomer 125 having therein localized conductive regions 127 of a conductive elastomer, such as a z-axis elastomer or anisotropic conductive elastomer of a type known in the art, may be disposed adjacent backside 119 of carrier substrate 118. The conductive regions 127 of such a substantially planar layer 126 preferably contact each electrically conductive via 121 or contact region (*see, e.g.*, reference 22a of FIG. 1) of a conductive element (not shown in FIG. 6A or 6B) to facilitate the transmission of electrical signals through each electrically conductive via 121 of carrier substrate 118 to or from bond pads 116. Substantially planar layer 126 may be disposed on backside 119 of carrier substrate 118 by known processes, such as by securing a preformed layer of elastomer having conductive regions 127 therein to backside 119. Alternatively, a quantity of non-conductive elastomer 125 may be disposed on backside 119 and spread to a substantially uniform thickness thereacross by known techniques, such as by spin-on processes or mechanical processes (e.g., the use of a doctor blade), electrically conductive vias 121 exposed through ~~non-conductive~~ non-conductive elastomer 125, and an electrically conductive elastomer disposed adjacent electrically conductive vias 121 so as to form conductive regions 127 peripherally surrounded by ~~non-conductive~~ non-conductive elastomer 125. The conductive components of a conductive elastomer disposed in this manner may also be aligned by known processes, such as by magnetically aligning the conductive components.